

Claims

- [c1] 1. A cylindraceous stage speaker system, comprising:
a cylindraceous body unit defining a first axis;
said body unit including at least one speaker having at least a front speaker face and a rear speaker face;
said front speaker face positioned at a first side of said body unit opposite an open second side;
at least a cylindraceous rear cover unit coaxial to said first axis, defining a single cylindraceous opening, and continuously bounding a respective enclosed space defined therein in which a medium of electro-mechanical energy absorption is disposed;
means for securing said body unit to said rear cover unit;
and
a total length of said cylindraceous stage speaker system being defined along said first axis and being the same as or greater than a maximum diameter of said stage speaker system along said axis.
- [c2] 2. A cylindraceous stage speaker system, according to claim 1, wherein:
a ratio x of said total length to said maximum diameter is defined as substantially about $1.0 \leq x \leq 3.5$,

whereby said stage speaker system is shaped for easy positioning and repositioning during a use by a user.

[c3] 3. A cylindraceous stage speaker system, according to claim 1, further comprising:
clamping means for removably clamping said body unit to said rear cover unit; and
said means for clamping forming at least one of a substantially sound-tight and a substantially water-tight seal.

[c4] 4. A cylindraceous speaker system, according to claim 1, further comprising:
means for controllably positioning said speaker system relative to at least one external fixture plane;
said means for controllably positioning including at least two opposing bosses on said body unit defining a line perpendicular to said first axis;
a first set of engaging elements threadably engageable with respective said bosses;
at least one yoke member; and
ones of said set of engaging elements adjustably connecting respective ends of said yoke member to said opposing bosses, whereby said means for controllably positioning allows a user to repositionably position said speaker system relative to said at external fixture plane.

[c5] 5. A cylindraceous speaker system, according to claim 4, further comprising:
means for securing said rear cover to said main body unit;
said means for securing in said means for removably clamping; and
said means for securing including at least one of a braided metal cable release-ably joining said rear cover to said main body unit, whereby when said means for removable clamping releases said main body unit said means for securing prevents unintended separation of said rear cover.

[c6] 6. A cylindraceous speaker system, according to claim 1, further comprising:
a shielding unit extending coaxial to said first axis of said body unit;
at least one cover screening member; and
means for removably securing said one cover screening member to said shielding unit; whereby said at least one cover screening member substantially covers a front opening of said shielding unit during said use and controls at least one of a visible wavelength entry and reflection, a foreign object entry into said shielding unit, and an energy wavelength exit from said shielding unit.

- [c7] 7. A cylindraceous speaker system, according to claim 6, wherein:
said at least one screening member includes at least one of a debris grill, an aperture control means for controlling an aperture of said fourth cylindrical opening, a sound transmitting camouflage covering means for preventing an external viewer from viewing said speaker means, and a waterproof-sound-transmitting means for preventing entry of an external moisture to said fourth cylindrical opening during an outdoor use.
- [c8] 8. A cylindraceous speaker system, according to claim 2, further comprising:
a shielding unit extending coaxial to said first axis of said body unit;
at least one cover screening member; and
means for removably securing said one cover screening member to said shielding unit; whereby said at least one cover screening member substantially covers a front opening of said shielding unit during said use and controls at least one of a visible wavelength entry and reflection, a foreign object entry into said shielding unit, and an energy wavelength exit from said shielding unit.
- [c9] 9. A cylindraceous speaker system, according to claim 8, wherein:
said at least one screening member includes at least one

of a debris grill, an aperture control means for controlling an aperture of said front opening, a sound transmitting camouflage covering means for preventing an external viewer from viewing said speaker means, and a waterproof-sound-transmitting means for preventing entry of an external moisture to said fourth cylindrical opening during an outdoor use.

[c10] 10. A cylindraceous speaker system, according to claim 1, further comprising:
waterproof means in said rear cover opposite said first cylindrical opening for guiding a wired audio connection from a rear face of said rear cover to said speaker means.

[c11] 11. A cylindraceous speaker system, according to claim 1, further comprising:
a plurality of rigid heat-radiating fins;
said plurality of fins arrayed about an outer diameter of said rear cover opposite said speaker means; and
each said fin radiating a thermal energy of said speaker system to a surrounding atmospheric system, whereby said speaker system prevents an undesirable buildup of thermal energy during said use.

[c12] 12. A cylindraceous stage speaker system, comprising:
a central body unit having a first axis;

said body unit including on an inner diameter, a coaxially positioned speaker means having at least a front speaker face and a rear speaker face;

said front speaker face positioned at a first side of said body unit opposite an open second side of said body unit;

a cylindraceous rear cover unit having a rigid housing;

said rear cover bounding a respective space defined therein in which a medium of electro-mechanical energy absorption is disposed;

said rear cover being coaxial to and defining an opening coaxial to said first axis;

clamping means for removably clamping said central body unit to said rear cover and for forming at least one of a substantially water-tight, a substantially sound-tight seal, and quick-release connection between said speaker unit and said rear cover;

a shielding unit bounding a first and a second cylindraceous opening;

said first and second openings being coaxial to each first axis;

said shielding unit substantially coaxial to each of said first axis, said body unit, said rear cover, and said speaker means,

a total length of said cylindraceous stage speaker system being defined along said first axis;

a maximum diameter of said stage speaker being a maximum diameter of said rear cover unit; and
a ratio x of said total length to said maximum diameter is defined as substantially about $1.0 \times 3.53.5$ by said stage speaker system is shaped for easy positioning and repositioning during a use by a user.

[c13] 13. A cylindraceous speaker system, according to claim 12, further comprising:
means for controllably positioning said speaker system relative to at least one external fixture plane;
said means for controllably positioning including at least two opposing bosses on said body unit defining a line perpendicular to said first axis;
a first set of compression elements threadably engageable with respective said bosses;
at least one yoke member; and
ones of said set of compression member adjustably connecting respective ends of said yoke member to said opposing bosses, whereby said means for controllably positioning allows a user to repositionably position said speaker system relative to said at external fixture plane.

[c14] 14. A cylindraceous speaker system, according to claim 13, further comprising:
means for securing said rear cover to said main body unit;

said means for securing in said means for removably clamping; and
said means for securing including at least one of a braided metal cable release-ably joining said rear cover to said main body unit, whereby when said means for removable clamping releases said main body unit said means for securing prevents unintended separation of said rear cover.

[c15] 15. A cylindraceous speaker system, according to claim 13, further comprising:
at least one cover screening member; and
means for removably securing said one cover screening member to said fourth cylindrical opening of said shielding unit; whereby said at least one cover screening member substantially covers said fourth cylindrical opening during said use and controls at least one of a visible wavelength entry and reflection, a foreign object entry into said shielding unit, and an energy wavelength exit from said shielding unit.

[c16] 16. A cylindraceous speaker system, according to claim 15, wherein:
said at least one screening member includes at least one of debris grill, an aperture control means for controlling an aperture of said fourth cylindrical opening, a sound transmitting camouflage covering means for preventing

an external viewer from viewing said speaker means, and a waterproof-sound-transmitting means for preventing entry of an external moisture to said fourth cylindrical opening during an outdoor use.

[c17] 17. A cylindraceous speaker system, according to claim 14, further comprising:
at least one cover screening member; and
means for removably securing said one cover screening member to said fourth cylindrical opening of said shielding unit; whereby said at least one cover screening member substantially covers said fourth cylindrical opening during said use and controls at least one of a visible wavelength entry and reflection, a foreign object entry into said shielding unit, and an energy wavelength exit from said shielding unit.

[c18] 18. A cylindraceous speaker system, according to claim 17, wherein:
said at least one screening member includes at least one of debris grill, an aperture control means for controlling an aperture of said fourth cylindrical opening, a sound transmitting camouflage covering means for preventing an external viewer from viewing said speaker means, and a waterproof-sound-transmitting means for preventing entry of an external moisture to said fourth cylindrical opening during an outdoor use.

[c19] 19. A cylindraceous speaker system, according to claim 12, further comprising:
waterproof means in said rear cover opposite said first cylindrical opening for guiding a wired audio connection from a rear face of said rear cover to said speaker means.

[c20] 20. A cylindraceous speaker system, according to claim 12, further comprising:
a plurality of rigid heat-radiating fins;
said plurality of fins arrayed about an outer diameter of said rear cover opposite said speaker means; and
each said fin radiating a thermal energy of said speaker system to a surrounding atmospheric system, whereby said speaker system prevents an undesirable buildup of thermal energy during said use.

[c21] 21. A computer controlled stage speaker system, comprising:
at least one stage speaker system;
at least one multiparameter lighting unit system;
computer control means for computerized controlling of said at least one stage speaker system and said multiparameter lighting unit system; and
said computer control means enabling a communication means for directing said at least one stage speaker sys-

tem to positionably reposition based upon a series of stored and programmable movement commands and for initiating at least one of a sound generation, a sound synthesis, and a sound reproduction of at least one of a digitally and an analog signal, according to a programmable and updatable computer controlled sequence stored in said computer control means during a use.

- [c22] 22. A computer controlled stage speaker system, according to claim 21, wherein:
- said at least one stage speaker system comprises:
 - a body unit having a first axis;
 - said body unit including a coaxially positioned speaker having at least a front speaker face and a rear speaker face;
 - said front speaker face positioned at a first side of said body unit opposite an open second side;
 - a rear cover unit coaxial to said first axis, continuously bounding a respective enclosed space defined therein in which a medium of electro-mechanical energy absorption is disposed;
 - said rear cover unit on said body unit forming at least one of a substantially water-tight and a substantially sound-tight seal; and
 - a total length of said cylindraceous stage speaker system being defined along said first axis and being the same as

or greater than a maximum diameter of said stage speaker system.

- [c23] 23. A computer control stage speaker system, according to claim 22, wherein:
said programmable and undatable computer controlled sequence includes data applicable to at least one of a sound, a position, and an volume parameter set stored in a memory of said computer control system.
- [c24] 24. A computer controlled stage speaker system, according to claim 23, wherein:
said communication means includes at least one of a wired and a wireless communication network communicating between said computer control system and said at least one stage speaker system and said lighting unit.
- [c25] 25. A computer controlled stage speaker system, according to claim 24, wherein:
said at least one communication network communicates at least one of a digital and an analog signal to said at least one speaker system including at least one of an audible and an inaudible signal.
- [c26] 26. A method of mounting at least one stage speaker system, comprising the steps of:
selecting at least one stage speaker system including at

least a first external surface on at least one of a body unit, a rear cover unit, and a shielding unit; and at least one of a heat sink element, a heat radiation coating, and a heat radiation element on said at least first external surface, whereby said at least one element enables desirable placement of said stage speaker system proximate a plurality of stage lighting units minimizing purchase costs and operator training; said stage speaker system being repositionably fixable to a stage lighting assembly structure and including at least a first means for adjustably fixing said stage lighting assembly structure relative to a desired target; positionably determining said at least one stage speaker system on said stage lighting assembly structure proximate said plurality of stage lighting units; and operably connecting said stage speaker system to a computer control system for controlling a positioning and at least one of an audible and inaudible operation of said stage speaker system while simultaneously controlling an operation of said plurality of stage lights, whereby said step of operably connecting includes a step of synchronized controlling of both said plurality of stage lights and said stage speaker system during a performance while permitting a generation of sound toward said desired target.

[c27] 27. A cylindraceous stage speaker system, comprising:
a body unit having a first axis;
said body unit including a speaker having at least a front speaker face and a rear speaker face;
said front speaker face positioned at a first side of said body unit opposite an open second side;
a rear cover unit coaxial to said first axis, defining at least a first opening and continuously bounding a respective enclosed space defined therein in which a medium of electro-mechanical energy absorption is disposed;
clamping means for removably clamping said body unit to said rear cover unit and for forming at least one of a water-tight and a sound-tight seal therewith proximate said first opening; and
means for controllably positioning said speaker system relative to at least one external fixture plane;

28. A cylindraceous stage speaker system, comprising:
a body unit having a first axis;
said body unit including proximate an inner diameter a fixably positioned speaker means having at least a front speaker face and a rear speaker face;
said front speaker face positioned at a first side of said body unit opposite an open second side of said body unit;
said open second side of said body unit being a first

cylindrical opening surrounding said rear speaker face;
a rear cover unit having a rigid housing;
said rear cover continuously bounding a respective space defined therein in which a medium of electro-mechanical energy absorption is at least partially restrained;
said rear cover being substantially coaxial to and defining a single second cylindrical opening;
said second cylindrical opening coaxial to said first cylindrical opening;
a shielding unit bounding a third cylindrical opening and a fourth cylindrical opening;
said third and fourth cylindrical openings being coaxial to each said first and second cylindrical opening;
said third cylindrical opening being removably joined to said body unit forming at least one of a water-resistant and a sound-resistant joining there between; and
said shielding unit coaxial to each of said first axis and said body unit, said rear cover, and said speaker means.

- [c28] 29. The combination of a cylindraceous stage speaker unit and a multi-parameter stage lighting unit, the combination comprising:
at least a first cylindraceous multi-parameter stage lighting unit;
at least a first cylindraceous stage speaker unit;
said stage lighting unit including at least a first housing

having at least a first open end for the projection of an illumination wavelength toward a first selected target; first means for adjustably fixing said first cylindraceous housing to an external lighting unit support structure and enabling an adjustment of said first open end relative to said first selected target during a use; said stage speaker system including at least a second housing substantially similar to said at least first housing and having at least a second open end opposite a third closed end; said second open end enabling the projection of an audible wavelength toward a second selected target; second means for adjustably fixing said second housing to said external light unit support structure and enabling an adjustment of said second open end relative to said second selected target during said use; and said second means for adjustably fixing being substantially similar to said first means for adjustably fixing, whereby said stage lighting unit and said stage speaker system are substantially and include substantially similar outward appearances.

- [c29] 30. The combination, according to claim 29, further comprising:
a second end covering device covering said second open end of said stage speaker system and substantially pre-

venting at least one of an entry and an emission of visible wavelengths of light there-through while remaining substantially transparent to the transmission of audible wavelengths, and

said third end of said stage speaker unit being both optically opaque and audibly opaque.

[c30] 31. The combination, according to claim 30, wherein:
said second end covering is at least one of a grill unit and an optically reflective member.

[c31] 32. The combination, according to claim 31, wherein:
said grill unit includes a plurality of openings sufficiently sized to diffuse the entry of and limit the reflection and exit of visible wavelengths from an interior of said second cylindraceous housing during said use, whereby an audience is not able to view an interior of said stage speaker unit with reflected light.

[c32] 33. A stage speaker system, comprising:
a cylindraceous body unit defining an first axis;
said body unit including at least one speaker having at least a front speaker face and a rear speaker face;
a rear cover unit on said body unit;
a shielding unit on said body unit opposite said rear cover unit and defining at least a first audio pathway away from said front speaker face;

at least a first external surface on at least one of said body unit, said rear cover unit, and said shielding unit;
and

at least one of a heat sink element, a heat radiation coating, and a heat radiation element on said at least first external surface, whereby said at least one on said at least first external surface enables a placement of said stage speaker system proximate an array of external stage lighting units.

- [c33] 34. A stage speaker system, comprising:
a cylindraceous body unit defining an first axis;
said body unit including at least one speaker having at least a front speaker face and a rear speaker face;
a rear cover unit on said body unit;
a shielding unit on said body unit opposite said rear cover unit and defining at least a first audio pathway away from said front speaker face;
at least a first external surface on at least one of said body unit, said rear cover unit, and said shielding unit;
and
at least one of a heat sink element, a heat radiation coating, and a heat radiation element on said at least first external surface, whereby said at least one on said at least first external surface enables said system to present no outward appearance of a speaker.

[c34] 35. A stage speaker system, comprising:
a cylindraceous body unit defining an first axis;
said body unit including at least one speaker having at
least a front speaker face and a rear speaker face;
at least a rear cover unit on said body unit;
at least a first external surface on at least one of said
body unit, said rear cover unit, and said shielding unit;
and
at least one of a heat sink element, a heat radiation
coating, and a heat radiation element on said at least
first external surface, whereby said speaker is internally
mounted within said stage speaker system and not ex-
ternally visible to an external audience.